PAPER CODE – 8481

12th CLASS – 12019

TIME: 20 MINUTES
MARKS: 17

CHEMISTRY , NEW COURSE
GROUP FIRST
(ACADEMIC SESSION: 2015 – 2017 TO 2017 – 2019

OBJECTIVE

NOTE: You have four choices for each objective type question as A , B , C and D . The choice which you think is correct , fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

QUESTION NO. 1

1 Alkali metals are
(A) Acidic in nature (B) Amphoteric in nature (C) Strong oxidizing agent (D) Strong reducing agents

2 Element Cs (Cesium) shows resemblance with
(A) Ca (B) Cr (C) both a, b (D) Fr

3 Which element form an ion with charge +3
(A) Be (B) Al (C) C (D) Si

4 Maximum electronegative character is present in
(A) Sb (B) N (C) P (D) Si

5 Maximum number of unpaired electrons are in cation
(A) Ni^{2+} (B) Co^{2+} (C) Mn^{2+} (D) Fe^{2+}

6 The strongest acid is
(A) HClO (B) $HClO_2$ (C) $HClO_3$ (D) $HClO_4$

7 Ether show the phenomenon of Isomerism
(A) Position (B) Functional group (C) Metamerism (D) Cis-Trans

8 Synthetic rubber is made by polymerization of
(A) Chloroform (B) Acetylene (C) Divinyl - acetylene (D) Chloroprene

9 Sooty flame on burning aromatic compound is due to
(A) High percentage of hydrogen (B) Ring structure
(C) High percentage of carbon (D) Resistant reaction with air

10 Reactivity of Grignard's reagent is due to
(A) Halogen atom (B) Mg-atom (C) Polarity of C-Mg bond (D) All of these

11 Cannizzaro's reaction is not given by
(A) HCHO (B)  (C) $CH_3 - \overset{O}{\overset{\|}{C}} - H$ (D) $(CH_3)_3\, C - \overset{O}{\overset{\|}{C}} - H$

12 Which one is not a fatty acid
(A) Propionic Acid (B) Acetic Acid (C) Phthalic Acid (D) Butanoic Acid

13 Which one element is not present in all proteins?
(A) Carbon (B) Hydrogen (C) Nitrogen (D) Sulphur

14 Phosphorous helps in growth of
(A) Root (B) Leaf (C) Seed (D) Stem

15 The pH range for acid rain is.....
(A) 7 to 6.5 (B) 6.5 to 6 (C)6 to 5.5 (D) less than 5

16 The fiber made up from Acrylonitril as monomer is .
(A) PVC (B) Ryon fiber (C) Acrylic fiber (D) Polyester fiber

17 Which compound is called as universal solvent
(A) H_2O (B) CH_3OH (C) C_2H_5OH (D) $CH_3 - O - CH_3$

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DGK

SECTION-I

QUESTION NO. 2 Write short answers any Eight (8) questions of the following 16

1	Why is diamond non-conductor of electricity?
2	Why fluorides have the highest lattice energies among the pure ionic compounds. Give two reasons.
3	It is easier to decompose Li_2CO_3 than K_2CO_3. Justify.
4	Why is aqueous solution of borax alkaline? Justify.
5	Give names and chemical formulae of four acids of boron.
6	Give balanced chemical reactions of boric acid with (a) Ethyl alcohol (b) Sodium Carbonate
7	Give a chemical reaction of acidified $KMnO_4$solution with nitrous acid.
8	What is aqua regia? How does aqua regia dissolve gold?
9	How is phosphoric acid converted into meta-phosphoric acid?
10	What are fertilizers? Why are they needed?
11	Name essential non woody raw materials used in the production of pulp.
12	How detergents pollute water?

QUESTION NO. 3 Write short answers any Eight (8) questions of the following 16

1	What are heterocyclic compounds? Give an example.
2	How will you convert 1-Butene to 1-Butyne ?
3	Define Markownikov's rule , illustrate it with an example.
4	What is Wurtz-Fittig reaction? Give an example.
5	What is meant by nitration of benzene? Write its reaction.
6	Write down the structural formulae of lactic acid and glycerol.
7	Ethanol has higher boiling point than diethyl ether. Give reason.
8	What is peptide bond? Write down formula of a dipeptide.
9	How will you prepare acetic anhydride from acetic acid?.
10	What is Zwitter ion? Give an example.
11	Write down the best method for the preparation of alkyl halides.
12	Why is dry ether necessary for the preparation of Grignard's reagent?

QUESTION NO. 4 Write short answers any Six (6) questions of the following 12

1	Why the lattice energy of ionic fluorides is greater than chlorides?
2	What is meant by available chlorine?
3	Write any four applications of noble gases.
4	What are typical and non-typical transition elements?
5	How can you convert acetaldehyde into lactic acid?
6	How can you chemically distinguish between Ethanal and Propanal?
7	What is condensation polymerization ? Give an example
8	What is meant by the term rancidity of oils?
9	Write down two characteristics of lipids.

SECTION-II

Note: Attempt any Three questions from this section 8 x 3 = 24

Q.5- (A)	Define and explain ionization energy along with Periodic trend.
(B)	Describe the role of Gypsum in agriculture and industry briefly.
Q.6- (A)	Explain Bessemer's process for the manufacture of steel
(B)	How live stock and leather tanneries pollute water.
Q.7-(A)	How Benzene reacts with (i) Br_2 (in presence of sun light) (ii) H_2 (iii) Cl_2 (in presence of $FeCl_3$) (iv) CH_3Cl (in presence of $AlCl_3$)
(B)	What are types of structural isomerism? Explain any two.
Q.8- (A)	Explain acidic nature of terminal alkynes with examples.
(B)	Write two methods for the preparation of phenol.
Q.9- (A)	Differentiate between SN^1 and SN^2 reactions.
(B)	Write down one laboratory and one industrial method of preparation of formaldehyde.

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12th CLASS – 12019

CHEMISTRY , GROUP SECOND
NEW COURSE
ACADEMIC SESSION: 2015 – 2017 TO 2017 – 2019

TIME: 20 MINUTES
MARKS: 17

OBJECTIVE

NOTE: You have four choices for each objective type question as A , B , C and D . The choice which you think is correct , fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

QUESTION NO. 1

1 Mark the correct statement
(A) Na^+ is smaller than Na atom (B) Na^+ is larger than Na atom
(C) Cl^- is smaller than Cl atom (D) Cl^- (ion) and Cl (atom) are equal in size

2 Which one of the following does not belong to alkaline earth metals?
(A) Be (B) Ra (C) Ba (D) Rn

3 Which element forms an ion with charge +3
(A) Beryllium (B) Aluminum (C) Carbon (D) Silicon

4 Out of all the elements of group VI-A the highest melting and boiling points are shown by the element
(A) Te (B) Se (C) S (D) Pb

5 An element that has a high ionization energy and tends to be chemically inactive, would most likely to be
(A) An alkali metal (B) A transition element (C) A noble gas (D) A halogen

6 Which of the following is a typical transition element?
(A) Sc (B) Y (C) Ra (D) Co

7 Linear shape is associated with which set of hybrid orbitals?
(A) SP (B) SP^2 (C) SP^3 (D) dSP^2

8 The presence of double bond in a compound is the sign of
(A) Saturation (B) Un-saturation (C) Substitution (D) Addition

9 The electrophile in aromatic sulphonation is
(A) H_2SO_4 (B) HSO_4^- (C) SO_3 (D) SO_3^+

10 For which mechanism, the first step involved is the same
(A) E_1 and E_2 (B) E_2 and SN_2 (C) SN_1 and E_2 (D) E_1 and SN_1

11 Which compound will have the maximum repulsion with H_2O ?
(A) C_6H_6 (B) C_2H_5OH (C) CH_3COCH_3 (D) $CH_3 - O - CH_3$

12 Acetone reacts with HCN to form a cyanohydrin , it is an example of
(A) Electrophilic addition (B) Electrophilic substitution
(C) Nucleophilic addition (D) Nucleophilic substitution

13 Which regent is used to reduce a carboxylic group to an alcohal ?
(A) H_2/Ni (B) H_2/Pt (C) $NaBH_4$ (D) Li AlH_4

14 A polymer is a large molecule built up by the repetition of small and simple chemical units ,known as
(A) Monomers (B) Dimers (C) Tetramers (D) Trimers

15 The polymer which can be softened and hardened by heating and cooling is called
(A) Thermoplastic (B) Thermosetting (C) Proteins (D) Fats

16 Phosphorous helps the growth of
(A) Roots (B) Leaves (C) Stems (D) Seeds

17 A single chloride free radical can destroy how many ozone molecules?
(A) 100 (B) 100000 (C) 10000 (D) 10

12th CLASS - 12019

CHEMISTRY , NEW COURSE **SUBJECTIVE** TIME : 2 HRS 40 MINUTES

GROUP FIRST MARKS : 68

ACADEMIC SESSION: 2015 – 2017 TO 2017 – 2019

DGK

SECTION-I

QUESTION NO. 2 Write short answers any Eight (8) questions of the following 16

1	Why oxidation state of noble gases is usually zero?
2	ZnO is of Amphoteric nature. Justify it.
3	What is the chemical nature of lime water and milk of magnesia?
4	Write down chemical formulae of minerals (i) Emerald (ii) Gibbsite
5	Write the names and the formulas of four boric acids.
6	Write down the four properties of vitreous silica.
7	How NO reacts with H_2S and H_2SO_3 ?
8	Write two methods of preparation of nitrous acid.
9	Write down two reactions in which P_2O_5 is acting as a dehydrating agent.
10	Write a chemical reaction for conversion of oil into a fat.
11	Write down two properties of enzymes.
12	How the temperature varies in the stratosphere and troposphere with change of altitude?

QUESTION NO. 3 Write short answers any Eight (8) questions of the following 16

1	Why is there no free rotation around a double bond?
2	How is a cis-alkene prepared from an alkyne ?
3	What is Markownikov's Rule? Give an example.
4	Draw the structures of Phenanthrene and Anthracene.
5	Give general mechanism of electrophilic substitution reactions of benzene.
6	Write reactions of ethyl magnesium bromide with (a) Ammonia (b)Water
7	What do you understand by the term β –elimination reactions ?
8	Why are alcohols, phenols and ethers considered as derivatives of water?
9	Give classification of monohydric alcohols with examples.
10	Write structures of (a) oxalic acid (b) Malonic acid
11	How are carboxylic acids prepared from alkyl nitriles?
12	What is meant by essential and non essential amino acids?

QUESTION NO. 4 Write short answers any Six (6) questions of the following 12

1	What are Freons and Teflon?
2	Give reactions of Bleaching powder with following reagents (a) dil. H_2SO_4 (b) NH_3
3	How is Radon formed from Radium? Explain by help of equation.
4	Give systematic names of following (a) $[Pt(OH)_2(NH_3)_4]SO_4$ (b) $[Fe(H_2O)_6]^{2+}$
5	Explain chemistry of Tallen's test.
6	Describe mechanism of Aldal condensation.
7	What are repeating units in the following polymers? (a) Polystyrene (b) Teflon
8	Differentiate between a glycoside linkage and a peptide linkage.
9	What are Lipids?

SECTION-II

Note: Attempt any Three questions from this section 8 x 3 = 24

Q.5-(A)	Write any two similarities and two differences between hydrogen and alkali metals.
(B)	Describe the manufacture of sodium hydroxide by diaphragm cell, diagram is not required.
Q.6-(A)	Explain the following properties for transition elements.(i) Paramagnetism (b) Colour.
(B)	Define smog. Give its types and write conditions for the formation of smog
Q.7-(A)	Define hybridization of orbitals. Explain the structure of methane with SP^3 hybridization.
(B)	Explain the sulphonation of benzene with mechanism
Q.8-(A)	Write reactions of Phenol with (i) dil. HNO_3 (ii) H_2SO_4 (conc) (iii) Br_2 (iv) CH_3COCl
(B)	How ethyne reacts with (i) Alkaline. $KMnO_4$ (b) 10 % H_2SO_4 in the presence of $HgSO_4$ (iii) HBr (iv) NH_3/Al_2O_3
Q.9-(A)	What products are formed when the following compounds are treated with ethyl magnesium bromide, followed by hydrolysis in the presence of an acid? (i) HCHO (ii) CH_3CHO (iii) CO_2 (iv) $(CH_3)_2CO$
(B)	How will you distinguish between (i) Methanal and Ethanal (ii) Ethanal and Propanone